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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,095	01/10/2001	James H. Gordon	1048.39078X00	6910

7590 10/07/2002
Antonelli, Terry, Stout & Kraus, LLP
Suite 1800
1300 North Seventeenth Street
Arlington, VA 22209

EXAMINER

VIGUSHIN, JOHN B

ART UNIT PAPER NUMBER

2827

DATE MAILED: 10/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/757,095

Applicant(s)

GORDON, JAMES H.

Examiner

John B. Vigushin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-10 is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Rejections Based On Prior Art

1. The following references were relied upon for the rejections hereinbelow:

Brown (US 5,166,573)**

Brimhall et al. (US 6,319,020 B1)

**Submitted by Applicant with Information Disclosure Statement (Paper No. 4).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Brown.

As to Claim 1, Brown discloses an array 44' of contact elements 14 (col.4: 43-52) at one end of a printed circuit board (Fig. 7) for contact with corresponding elements of an ultrasonic array (col.11: 44-49); a connector 46' at an end opposite the contact array 44'; a top layer 26 and a bottom layer 22 each being a ground plane (Figs. 3 and 4; col.7: 11-18 and 57-58: shield 42 is a ground, as indicated in col.7: 23-24, and is connected to shorted layers 26 and 22, rendering layers 26 and 22 as ground planes); at least one internal layer between top and bottom layers 26 and 22 and carrying thereon printed circuit lines 50' connecting array 44' of contact elements 14 with connector 46' (Figs. 7 and 8; col.7: 68-col.8: 2; col.8: 16-19; col.11: 39-41 and 56-59).

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As to Claim 3, Brown further discloses that the printed circuit board is flexible (col.11: 59-col.12: 7).

As to Claim 5, Brown further discloses that contact elements 14 are contact pads (Figs. 2 and 7; col.4: 43-52).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brown in view of Brimhall et al.

I. Brown discloses that the printed circuit board is flexible (col.11: 59-col.12: 7) but does not teach an embodiment wherein the printed circuit board is rigid.

II. Brimhall et al. discloses a flexible printed circuit board 16 electrically joining contacts 18-20 with connector 13 (Figs. 1 and 2; col.3: 46-47) and further teaches that the printed circuit board 16 can alternatively be rigid (col.3: 50-51).

III. Since both Brown and Brimhall et al. teach contact/connector/printed-circuit-board assemblies, the use of rigid material in applications where a rigid circuit board is be suitable, as taught by Brimhall et al., would have been readily recognized in the pertinent art of Brown.

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IV. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the flexible printed circuit board of Brown with a rigid circuit board material, as taught by Brimhall et al., for applications where a rigid circuit board would be more suitable.

Allowable Subject Matter

6. Claims 6-10 have been allowed.

7. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

As to Claim 2, patentability resides in that *the at least one internal layer includes two layers with half of the contact elements being connected to lines on each layer*, in combination with the other limitations of the claim.

As to Claims 6-9, patentability resides in *a switch unit for connecting each of the printed circuit lines to ground except for the line connected by the multiplexer to the receiving unit*, in combination with the other limitations of base Claim 6.

As to Claim 10, patentability resides in *connecting all the printed circuit lines except the selected line to ground*, in combination with the other limitations of the claim.

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9. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ellis discloses an array of contact elements 120a and 120b located at one end of a printed circuit board 54 for contact with corresponding elements of a detector 50 (col.3: 23-32); a connector at an end opposite the array of contact elements 120a and 120b (col.4: 35-50); a top and bottom layer each being a ground plane 74 (Fig. 7; col.4: 26-29); at least one internal layer between the top layer 74 and bottom layer 74 (col.4: 35-40) and carrying thereon printed circuit lines connecting the array of contact elements 120a and 120b with the connector (col.4: 26-40).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B. Vigushin whose telephone number is 703-308-1205. The examiner can normally be reached on 8:30AM-5:00PM Mo-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



John B. Vigushin
Examiner
Art Unit 2827

jbv
October 1, 2002